Art IX.—*On the Validity of Callitris Morrisoni.*

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Communicated by Professor Alfred J. Ewart, Ph.D., D.Sc., F.L.S.

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In Vol. 20 (N.S.), part I., 1907, p. 76, of these Proceedings, Professor Ewart under "Contributions to the Flora of Australia, No. 6," expresses an opinion as to the specific rank of this species.

Inter alia he states, "There can be no doubt that this species (C. robusta) is a variable one, but variations are often shown on one and the same specimen, and hence it is necessary to retain for it the scope given by Bentham, and include under it such varieties as microcarpa, verrucosa, intratropica, and possibly also the columellaris of F. v. M. and the Morrisoni of R. T. Baker."[1]

Unfortunately no facts are educed to support the statement that there "can be no doubt that C. robusta is a variable species," or that it is necessary to retain for it the scope given by Bentham and include microcarpa, verrucosa, intratropica, and possibly columellaris and C. Morrisoni. That a variation of fruits can be found on the same twig is common in most species, but the point is, can fruits similar to C. verrucosa, C. intratropica, C. Drummondii and C. calcarata be found on one and the same specimen, for my species is allied to these two last and not C. robusta, which was a misprint in my paper? I maintain, No.

The establishment of C. Morrisoni was made only after

1. A thorough examination of all Callitris material in the principal herbaria of Europe and Australia.
2. A thorough morphological examination of *living material* of nearly every known Callitris species of Australia and Tasmania.
3. A macro- and microscopical examination of their timbers, barks, leaves and fruits.

1 Proc. Linn. Soc. N.S.W., vol. xxxi., 1906.

4. A chemical investigation of their oils, sandarachs, camphors &c.
5. And lastly the aid of the physicist (which supports this differentiation) has been laid under tribute.

The result of all this has been the accumulation of specific data that leave no alternative but to differentiate all these species enumerated (supra). That is, if differences constitute a species, as I believe they do.

It would be asking the Royal Society too much to publish here all the results obtained in this connection, in order to prove the case, but it is hoped they will be in print next year.

I might, however, state en passant that, concerning two of the proposed varietal forms, i.e. verrucosa and columellaris, these two morphologically, cortically, ligneously, chemically, and physiologically are quite different, and again any one who has compared only the timbers of intratropica and microcarpa would hardly be prepared to say they also are one and the same species.

Unfortunately Professor Ewart does not say to which C. robusta his remarks refer. It was to clear the identity of this species more especially that the European herbaria were visited by me, for in my opinion it was hopeless to do it in Australia, and this was especially impressed on me after reading De Candolle's list of doubtful and excluded species of Callitris, [Prodromus, vol. 16. pp. 451-3].

To place all those Callitris enumerated by Professor Ewart under one species would be a parallel case to that of Baron von Mueller, who when dealing with Eucalyptus amygdalina, Labill, synonymised at least half a dozen good species under this name, which can all be shown to possess distinctive morphological, cortical, chemical, and other physiological differences from La Billardière's species.

These two cases are only another illustration of the failure of *morphology alone* in the determination of species in Eucalypts and Callitris.

In this connection no better example can be quoted than that of Eucalyptus maculata and E. citriodora. Both species were established by Hooker, and later were synonymised by Baron von Mueller because morphologically the leaves and fruits were identical.

Recent research has shown (1) that the two trees differ in facies, being easily distinguished in the field; (2) that they differ in the quality and texture of their timber and bark; (3) most decidedly in the chemical constituents of the leaf content.

In all probability E. citriodora will be a source of considerable commercial enterprise in the future when it will be known as such, and not as E. maculata, var. citriodora, of recent botanists, and the same remarks will also apply to the several Pines it is now proposed to classify as Callitris robusta.